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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,678	06/16/2005	Hee-Seop Kim	8054-125 (LW8088PC/US)	8599
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EXAMINER				
ARMAND, MARC ANTHONY				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/539,678

Applicant(s)

KIM ET AL.

Examiner

MARC ARMAND

Art Unit

2814

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 22-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date 06/16/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's election of claims (1-21) in the present application is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

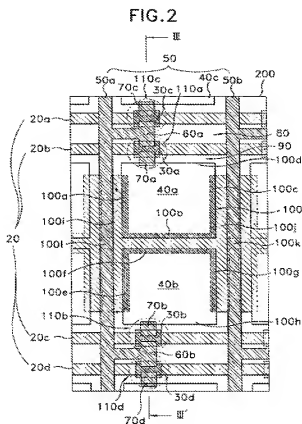
Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-10 are rejected under 35 U.S.C. 102(b) as being unpatentable over Jun et al., (Jun) USPAT 6,040,882.**



Regarding to claims 1 and 4, Jun shows in fig.2, an LCD device having : a first gate line (20a,20b)(col.4,line 53) ; a second gate line (20c,20d) that is electrically insulated from the first gate line (20a,20b); a data line (50)(col.4,line 50) crossing the first and second gate lines (20a,20b) to define a pixel region (90) that includes first and second regions (see fig.2); a first switching device (110a) that is electrically connected to the first gate line (20a,20b) and the data line (20b); a second switching device (110b) that is electrically connected to the second gate line (20c,20d); a transmissive electrode (40b) that is electrically connected to the second switching device (110b) , the transmissive electrode (40b) being formed in the first region; a reflective electrode (40a)(col.4,line 40-44) that is electrically insulated from the transmissive electrode

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(40b), the reflective electrode (40a) being formed in the second region that is adjacent to the first region; and a compensating wiring (100) that is electrically connected to the first switching device (110a), the compensating wiring facing the reflective electrode (40a) and the transmissive electrode (40b) with an insulation layer (110) interposed between the compensating wiring (100) and the reflective electrode (40a) and between the compensating wiring (100) and the transmissive electrode (40b).

Regarding to claim 2, Jun shows in fig.2, an LCD device wherein the switching device (110a and 110b) corresponds to a thin film transistor comprising a gate electrode (20) that is electrically connected to the gate line (20a, 20b), a source electrode (70) that is electrically connected to the data line (50), and a drain electrode (60) that is electrically connected to the transmissive electrode (40b) and the compensating wiring (100).

Regarding to claim 3, Jun shows in fig.2, an LCD device wherein the compensating wiring (100) and the data line (50) are formed from a same layer (co.4, line 63).

Regarding claim 5, Jun shows in fig.2, an LCD device, wherein the first switching device corresponds to a first thin film transistor (110a and 110b) including a gate electrode (20) that is electrically connected to the second gate line (20c, 20d), a source electrode (70) that is electrically connected to the data line (50), and a drain electrode (60) that is electrically connected to the compensating wiring (100).

Regarding claim 6, Jun shows in fig.2, an LCD device, wherein the second switching device (110b) corresponds to a second thin film transistor including a gate electrode (20) that is electrically connected to the first gate line (20a, 20b), a source electrode (70) that is electrically connected to a ground voltage, and a drain electrode (60) that is electrically connected to the transmissive electrode (40b).

Regarding claim 7, Jun shows in fig.2, an LCD device having a third thin film transistor (110c) that includes a gate electrode that is electrically connected to the first gate line (20), a source electrode (70) that is electrically connected to the data line (20), and a drain electrode (60) that is electrically connected to the compensating wiring (40a).

Regarding claim 8, Jun shows in fig.2, an LCD device having a second switching device (110b) corresponds to the second thin film transistor including a gate electrode that is electrically connected to the first gate line (20a, 20b), a source electrode (70) that is electrically connected to the data line (20), and a drain electrode that is electrically connected to the transmissive electrode (40b) and the compensating wiring (40a).

Regarding claim 9, Jun shows in fig.2, an LCD device having a circuit for allowing the first gate line (20a,20b) to maintain a first driving signal until the second gate line (20c,20d) receives a second driving signal.

Regarding to claim 10, Jun shows in fig.2, an LCD device wherein the compensating wiring (100) and the data line (50) are formed from a same layer (co.4,line 63).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. **Claims 11-13,15,16,18,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jun in view of Katase; (Katase) US 2002/0008898.**

Regarding to claims 11,12,13,16, 18,Jun shows in fig.2, an LCD device having : a first gate line (20a,20b)(col.4,line 53) ; a second gate line (20c,20d) that is electrically insulated from the first gate line (20a,20b); a data line (50)(col.4,line 50) crossing the first and second gate lines (20a,20b) to define a pixel region (90) that includes first and second regions (see fig.2); a first switching device (110a) that is electrically connected to the first gate line (20a,20b) and the data line (20b); a second switching device (110b) that is electrically connected to the second gate line (20c,20d); a transmissive electrode (40b) that is electrically connected to the second switching device (110b) , the transmissive electrode (40b) being formed in the first region; a reflective electrode (40a)(col.4,line 40-44) that is electrically insulated from the transmissive electrode (40b), the reflective electrode (40a) being formed in the second region that is adjacent to the first region; and a compensating wiring (100) that is electrically connected to the first switching device (110a), the compensating wiring facing the reflective electrode (40a) and the transmissive electrode (40b) with an insulation layer (110) interposed between the compensating wiring (100) and the reflective electrode (40a) and between the compensating wiring (100) and the transmissive electrode (40b).

June differs from the claimed invention because he does not explicitly disclose an LCD device having a second substrate including a common electrode that faces the transmissive electrode and the reflective electrode; and a liquid crystal layer interposed between the first and second substrates; a plurality of common electrodes

Katase shows in fig.2, a display device having a second substrate (200) (para 0070) including a common electrode (201) (para 0070) that faces the transmissive

electrode (104) and the reflective electrode (104) (second); and a liquid crystal layer (2) interposed between the first (200) and second substrates. Moreover the device has a plurality of common electrodes; (202) can be used as a common electrode (para 0137) and they correspond to each pixels (104).

Katase is evidence that ordinary workers skilled in the art would find reasons, suggestions or motivations to modify the device of Jun. Therefore, at the time the invention was made; it would have been obvious to have a display device having a second substrate including a common electrode that faces the transmissive electrode and the reflective electrode; and a liquid crystal layer interposed between the first and second substrates; a plurality of common electrodes; as taught by Katase in it's device because it will provide a device with high-quality images in higher productivity; teaching of Katase (para 0026).

Regarding to claim 15, Jun shows in fig.2, a display device wherein a first voltage that is applied to the reflective electrode (40b) is lower than a second voltage that is applied to the transmissive electrode (40a).

As for the statements "a first voltage that is applied to the reflective electrode is lower than a second voltage that is applied to the transmissive electrode" it is considered functional language. Labels, statements of intended use, or functional language do not structurally distinguish claims over prior art. The structure of the device is substantially identical to that of the claimed structure which can function in the same

manner, be labeled in the same manner, or be used in the same manner. *MPEP 2112.01*.

Regarding claim 19, Jun shows in fig.2, a display device wherein the pixel electrodes comprise: a transmissive electrode (40a) that allows a first light provided from a backside of the first substrate to transmit the transmissive electrode (40a); and a reflective electrode (40b) that reflects a second light provided from a front side of the second substrate.

As for the statements "that allows a first light provided from a backside of the first substrate to transmit the transmissive electrode; and a reflective electrode that reflects a second light provided from a front side of the second substrate". Labels, statements of intended use, or functional language do not structurally distinguish claims over prior art. The structure of the device is substantially identical to that of the claimed structure which can function in the same manner, be labeled in the same manner, or be used in the same manner. *MPEP 2112.01*.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jun and Katase as applied to claims 11-13,15,16,18,19 and further in view of Park et al., (Park) US 2003/0020853.

Regarding to claim 17, Jun shows in fig.2, a display device having a gate line (20), a metal wiring (100) and a reflective electrode (40b).

Jun and Katase differs from the claimed invention because he does not explicitly disclose a semiconductor device where the gate line protrudes to form the metal wiring that faces the reflective electrode.

Park shows in fig.4, a display device having a gate line (141) that protrudes to form the metal wiring that faces the reflective electrode (163) (para 0033).

Park is evidence that ordinary workers skilled in the art would find reasons, suggestions or motivations to modify the device of Jun modify by Katase. Therefore, at the time the invention was made; it would have been obvious to have gate line protrudes to form the metal wiring that faces the reflective electrode; Teaching of Park in its device because it will enhance the quality; teaching of Park (para 0016).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jun and Katase as applied to claims 11-13,15,16,18,19 and further in view of Tsunoda et al., (Tsunhoda) US 20030164500.

Regarding to claim 14, Jun modify by Katase discloses a first switching device (110a) corresponds to a first transistor including a first electrode that is electrically connected to the data line (50), a second electrode that is electrically connected to the gate line (20), and a third electrode that is electrically connected to the transmissive electrode (40a), and the second switching device (110b) corresponds to a second transistor including a fourth electrode (see fig.2) that is electrically connected to the third electrode, a fifth electrode that is electrically connected to the gate line (20), and a sixth electrode that is electrically connected to the reflective electrode (40b).

Jun modify by Katase differs from the claimed invention because he does not explicitly disclose a NMOS TFT.

Tsunoda discloses (para 0098) a device that can use a PMOS or NMOS Thin film transistor.

Tsunoda is evidence that ordinary workers skilled in the art would find reasons, suggestions or motivations to modify the device of Jun modify by Katase. Therefore, at the time the invention was made; it would have been obvious to have a NMOS TFT in its device since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. MPEP 214.04.

9. Claims 20,21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jun and Katase as applied to claims 11-13,15,16,18,19 and further in view of Shin et al., (Shin) US 6,549,258.

Regarding to claim 20, Jun modify by Katase discloses a first common electrode (201) and a second common electrode common (202) that faces the first and second electrodes (104).

Jun modify by Katase differs from the claimed invention because he does not explicitly disclose a display device where a second common electrode that is electrically insulated from the first common electrode.

Shin shows in fig.3C a display device where a first electrode (106) is insulator from a second common electrode (123) (col.4, line 52-67).

Shin is evidence that ordinary workers skilled in the art would find reasons, suggestions or motivations to modify the device of Jun modify by Katase. Therefore, at

the time the invention was made; it would have been obvious to have a display device having a second common electrode that is electrically insulated from the first common electrode; teaching of Shin in its device because it would prevent the light leakage; teaching of Shin (col.3, line 5).

Regarding to claim 21, Katase shows in fig.2 a display device having a first common electrode (201) and a second common electrode common (202).

As for the statements "wherein a first voltage is applied to the first common electrode and a second voltage that is lower than the first voltage is applied to the second common electrode" is considered functional languages. Labels, statements of intended use, or functional language do not structurally distinguish claims over prior art. The structure of the device is substantially identical to that of the claimed structure which can function in the same manner, be labeled in the same manner, or be used in the same manner. *MPEP 2112.01*.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC ARMAND whose telephone number is (571)272-9751. The examiner can normally be reached on Monday - Friday between 9-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marc-Anthony Armand
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